4. (Amended) Method according to claim 1, characterized in that, in said reception filter (15), a step of decimation by a factor M=4 is perfromed, followed by a filtering step.

5. (Amended) Method according to claim 1, characterized in that said sending filter (12) and/or said reception filter (15) have a structure in the form of at least one lattice.

REMARKS

The above preliminary amendment is made to remove multiple dependencies from claims 3, 4 and 5.

Applicants respectfully request that the preliminary amendment described herein be entered into the record prior to calculation of the filing fee and prior to examination and consideration of the above-identified application.

If a telephone conference would be helpful in resolving any issues concerning this communication, please contact Applicants' primary attorney-of record, John J. Gresens (Reg. No. 33,112), at (612) 371.5265.

Respectfully submitted,

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Dated: December 13, 2000

By [signature]
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JJG/tvm

-- CLAIM --

$$F(z) = \left[F_0(z^4)\ F_1(z^4)\ \tilde{F}_1(z^4)\ \tilde{F}_0(z^4) \right] \begin{bmatrix} 1 \\ z^{-1} \\ z^{-2} \\ z^{-3} \end{bmatrix}$$

3. Method according to any of the claims 1 and 2 characterized in that, in said sending filter (12), a filtering step followed by a step of interpolation by a factor of M=4 is performed. -- CLAIM 1 --

4. Method according to any of the claims 1 à 3 characterized in that, in said reception filter (15), a step of decimation by a factor M=4 is performed, followed by a filtering step. -- CLAIM 1 --

5. Method according to any of the claims 1 to 4 characterized in that said sending filter (12) and/or said reception filter (15) have a structure in the form of at least one lattice.

6. Method according to claim 5, characterized in that said sending filter (12) and said reception filter (15) are each constituted by a pair of polyphase components respectively given by the following equations :

$$\begin{bmatrix} F_0 \\ F_1 \end{bmatrix} = gA(\alpha_n)\Lambda(z)A(\alpha_{n-1})\ldots\Lambda(z)A(\alpha_0)\begin{bmatrix} 1 \\ 0 \end{bmatrix}$$

$$\begin{bmatrix} -\tilde{F}_1 \\ \tilde{F}_0 \end{bmatrix} = gA(\alpha_n)\Lambda(z)A(\alpha_{n-1})\ldots\Lambda(z)A(\alpha_0)\begin{bmatrix} 0 \\ 1 \end{bmatrix}$$

with :

$$A(\alpha) = \begin{bmatrix} 1 & \alpha \\ -\alpha & 1 \end{bmatrix} \quad \text{and} \quad \Lambda(z) = \begin{bmatrix} 1 & 0 \\ 0 & z^{-1} \end{bmatrix}$$

where g is a non-null constant of standardisation and α_i are real coefficients.

7. Method according to claim 6, characterized in that it implements a two-lattice structure.

8. Method according to claim 6, characterized in that it implement a single-lattice structure working at a double frequency.

9. Device for the filtering of Nyquist digital signals with null inter-symbol interference designed to process a physical signal transmitted between a sender and a receiver through a transmission channel,

based on an Nth order $P(z) = F^2(z)$ symmetrical filter implementing an oversampling factor $M = 4$ and forming a matched pair comprising a sending filter (12) and a reception filter (15),